NOTE III.

ON A COLLECTION OF LAND- AND FRESHWATER MOLLUSKS FROM TALIABU (XULLA-ISLES)

BY

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(With Plate 1).

The Mollusks recorded in this paper, have been collected by Mr. J. W. van Nouhuys on Taliabu, one of the larger Xulla-isles, and were presented by him to the Leyden Museum of Natural History, together with a few other species from various localities, amongst which latter are however no new species. As the only record of Mollusks from the Xulla-isles is that of *Xesta citrina* var. by Wallace, mentioned hereafter in my note on *X. halmaherica,* I thought it would be interesting to enumerate them all, instead of describing only the new forms. I think the number of species existing in that island will not be exhausted by these 17 species, the more so as the second part of the collection contained several species not represented in the first lot, but the number seems to be important for a locality the molluscan fauna of which was nearly quite unknown.

1. *Xesta halmaherica* (Strubell) Kobelt.

Kobelt, Martini Chemn. Conch. Cab. Ed. II, p. 834, Pl. 225, figs. 8—11.

» Abh. der Senckenb. naturf. Gesellsch. Band 24, Heft 1, 1897, p. 51, Pl. 6, figs. 1—12.

The collection contains a large number of a *Xesta*, which agrees in many respects with the figures of Kobelt, though the apex is more blunt, and in some specimens the last whorl higher; moreover many of them are characterized by a red spot near the umbilicus and, in a few cases, also a red line along the margin of the aperture. Prof. O. Boettger, who has had the kindness to compare them, at my request, with the types of *X. halmaherica*, writes that the specimens could not be separated from that species, but that the red-stained ones can receive a varietal name. The majority of the specimens agrees in colour with the figures in the Abh. Senckenb. Gesellsch., but a few ones have on the last whorl purple-brown streaks on a light ground and a dark apex. For those with the red stain I propose the name of:

var. *taliabuensis*, n. var.

Shell agreeing with the type in shape and size but with a conspicuous red spot around the umbilicus, eventually with a red bordered aperture.

This variety may be the same form as that recorded by Wallace (Proc. Zool. Soc. Lond. 1865, p. 406) and cited by Martens (Ostas. Landschn. p. 196), as living on the Xulla-isles, under the name of *Nanina citrina* L. var.; Gude (A classified List of the Helicoid land-shells of Asia: Journ. of Malacology, 1903, Vol. X, p. 85) has mentioned only *X. citrina* from these isles, probably from the same source.

I found in the radula about 400 rows of teeth, which agrees sufficiently with the number of 427, observed by F. Wiegmann (Abh. der Senckenb. naturf. Gesellsch. Band 24, Heft 3, 1898, p. 404).

One of the tubes containing some typical specimens and one of the variety, contains the special label: »Taliaboe, Wai Miha."

2. *Xesta trochus* Mull.?

Martens, Ostas. Landschn. p. 210.
Sarasin, Die Landschn. von Celebes, p. 138, Pl. 18, figs. 162—165.

It is with some doubt that I have applied this name to the only specimen. It is a dead shell, which when living seems to have been of a brown colour, with a yellow peripherial band and a light yellowish-brown base. The sides of the spire are more convex than usually, but not more than in fig. 162 of P. and F. Sarasin (l. c.). On the last whorl, which is partly covered by a yellow epidermis, I see numerous, irregular, oblique striae, not mentioned in any of the descriptions at my disposal, but I find a similar, though less developed sculpture on a few of the specimens of *X. trochus* from Patunuang, South Celebes, received from H. Fruhstorfer. Perhaps, if more specimens in good condition could be compared, this form may receive a new varietal name; the colour is very peculiar and I find nothing like it mentioned in litterature.

3. *Hemiplecta xullaensis*, n. sp.

Shell orbicular-convex, narrowly perforate, thin, slightly keeled, the keel almost disappearing anteriorly, horncoloured with a supraperipherical, rufous band accompanied by a yellow one, which can become obsolete towards the aperture; spire moderately convex, apex blunt, whorls about 4, slightly convex, with a deep suture. Sculpture consisting of fine growth-striae, with eventually stronger ones, giving to the shell a nearly ribbed appearance in some parts; on the ultimate and penultimate whorls, they are crossed by impressed, rugose striae; base convex, lighter coloured, with fainter sculpture. Aperture diagonal, lunate, margins thin, straight, connected by a thin layer, columellar margin reflected over the umbilical perforation.

The measurements of the largest, probably adult, specimen which is more depressed, and of another one are:

Diam. maj. 28, min. 22, alt. $16^{1}/_{2}$, apert. alt. obl. 14,
[lat. 16 Mill.
» » $26^{3}/_{4}$, » 22, » 18, » alt. obl. 15,
[lat. $14^{1}/_{2}$ Mill.

This species, which, as just stated, varies slightly in altitude, is allied to *H. Fruhstorferi* Martens and to *H. rufolineata* Smith, *intersecta* Smith and *bonthainensis* Smith; *H. rufolineata* from Lombok and *H. bonthainensis* from Celebes, are at once to be distinguished by their granular sculpture; *H. intersecta,* which I have not seen, seems to have no spiral sculpture. The nearest ally, also in sculpture, is *H. Fruhstorferi,* but the new species differs by a stronger shell, less conspicuous keel and by the rufous band; in the new species the whorls are convex, with strongly impressed suture, in *Fruhstorferi* the median whorls are scarcely convex, with a very shallow suture.

4. *Trochomorpha Nouhuysi,* n. sp.

Shell orbicular, widely umbilicate, sharply keeled, reddish brown, with a darker zone above the keel; base chestnut-brown, keel whitish; spire moderately elevated, with a blunt apex, whorls $5^1/_2$, slightly convex, suture shallow by the prominent keel which is distinctly visible on the lower whorls as a thin whitish thread, base flatter than the upper part of shell. Sculpture consisting of fine growth-striae, mixed with a few stronger ones, becoming coarser on the last whorl, nearly riblike towards the aperture, especially near the keel; sculpture of the base much finer. Umbilicus pervious, funnel-shaped, occupying about $^1/_5$ of the diameter of the shell. Aperture depressedly-lunate, upper margin straight and thin; basal and columellar margins regularly curved, slightly thickened.

Diam. maj. $19^3/_4$, min. $17^1/_4$, alt. 7, apert. alt. obl. $5^1/_2$, lat. 8 Mill.

This species is by its shape and size, quite different from the bi-coloured species of the East Indian Archipelago.

5. *Chloritis macrostoma* Gude.

Gude, Proc. Mal. Soc. Lond. Vol. VII, 1906, p. 42,
Pl. 5, figs. 7—7*b*.

Of this species several specimens have been collected, however only a few with the brown epidermis. Mr. Gude, who has of late described it after a specimen from Bangaya in the British Museum, has had the kindness to compare the specimens with the type. They vary in altitude of the spire, in the width of the umbilicus, and in the upper margin of the aperture, which is more or less ascending; the last whorl is less descending near the aperture than in the figure of Gude. The largest diameter of the shell varies from 42 to 45 Mill.

6. *Chloritis biomphala* Pfr.

Pfeiffer, Proc. Zool. Soc. Lond. 1862, p. 272.
» Mon. Helic. Viv. Vol. V, p. 391.

Two of the specimens are young and bleached, one adult is bleached and broken; it is however interesting to state that this species, which Pfeiffer knew only from Ceram, is living also on Taliabu. I owe to Mr. Gude, who has just made a special study of *Chloritis*, the identification of these worn specimens.

7. *Obba marginata* Müll., *forma major* Pfr.

Pfeiffer, Mon. Helic. viv. Vol. I, p. 396.
Reeve, Conch. Ic. *Helix*, fig. 129.

Rather numerous specimens, which with only one exception have been collected dead, agree sufficiently with a typical specimen from the Philippines; they are however larger, their largest diameter varying from 28 to 31 Mill., and consequently they belong to Pfeiffer's forma major. In shape they vary in altitude of the spire, corresponding to a flatter base. This is, as far as I know, the first locality for more typical specimens, since Martens (Ostas. Landschn. p. 295, Pl. 17, fig. 4) has described *Helix sororcula* from Celebes, and Möllendorff (Binnen-Moll. von den Talaut-Inseln: Abh. und Ber. des Kön. Zool. u. Anthropol.-Ethnogr. Mus. zu Dresden, 1896/97) *Obba Meyeri* from the Talaut-isles. The majority of the specimens is more elevated, but as also very flat specimens occur, I see no reason to separate them even as a variety.

8. *Crystallopsis obliquata* Desh.

Desh. in Ferussac, Hist. nat. des Moll. I, p. 219,
Pl. 28 A, figs. 3 et 4.

Under this name I include two specimens, which differ slightly; the youngest of the two agrees in most respects with Ferussac's description and figure, but the upper margin of the aperture descends not so much, consequently the aperture is a little higher; in the dorsal view I can see no difference of any importance; in the other specimen the aperture descends still less and the last whorl is less laterally compressed. As however these characters prove to be variable in these respects, I don't doubt that they must be referred to Ferussac's species. Under the lens I observe very fine spiral striae; especially the younger shell has a slight yellowish tinge. The habitat of the species was still unknown, for specimens recorded from Tormio, Tukan-besi, differ considerably from Ferussac's figure, and belong, according to Prof. O. Boettger, to *C. physalis* Pfr.

9. *Auricula Judae* Lin.

Martens, Süss- u. Brackw.-Moll. p. 154, Pl. VIII,
figs. 6—11.

One shell from the Lagoon near Lekitobi on Taliabu is rather small, having only a length of 31 Mill.; it belongs to a form with short spire. It has been collected with a few young specimens which belong to the Cerithidae.

10. *Ampullaria ampullacea* Lin.

Martens, Süss- u. Brackw.-Moll. p. 17.
Sarasin, Süssw.-Moll. von Celebes, p. 68, Pl. XI,
fig. 163.

The specimens from the Xulla-isles, without exact locality, agree very well with fig. 163 of P. and F. Sarasin, as the spire is very short.

11. *Melania glans* Busch.

Brot, Mart.-Chemn. Conch. Cab. Ed. II, *Melania*, p. 14, Pl. 1, figs. 3 et 3a.
Martens, Süss- u. Brackw.-Moll. p. 30.

One shell, with the whorls less convex than in specimens from Java, but agreeing in this respect with those from Flores.

12. *Melania granifera* Lam.

Brot, Mart.-Chemn. Conch. Cab. Ed. II, *Melania*, p. 321, Pl. 33, figs. 13 et 13a.
Martens, Süss- u. Brackw.-Moll. p. 71.
Sarasin, Süssw.-Moll. von Celebes, p. 46.

The rather numerous specimens vary in the convexity of the whorls, some specimens approach *M. celebensis* Q. & G. — Martens (l. c.) says that often specimens are found which cannot be identified without doubt. P. & F. Sarasin (l. c.) have united them. The majority of the specimens under consideration are much more convex than any of the numerous specimens of *M. celebensis* I have seen.

13. *Melania scabra* Müll.

Brot, Mart.-Chemn. Conch. Cab. Ed. II, *Melania*, p. 266, Pl. 27, figs. 14, 14a—e, 15 et 15a.

One specimen.

14. *Cyclotus xullaensis*, n. sp.

Shell globosely discoid, solid, openly umbilicated, upper whorls blue-black, the subsequent ones apparently red-brown with a blue-black band near the suture; last whorl more or less dark brown, with irregular white markings on the upper surface, a dark band below the periphery, lighter near the umbilicus. Whorls 5, moderately convex; last whorl depressed near the suture. The shell, in fresh condition, will prove to be covered by a yellowish epidermis, as traces of it are present. Sculpture consisting of conspicuous lines of growth, crossed on the upper part by impressed spiral striae and a few, rather irregular, obsolete, spiral lirae. Last whorl slightly keeled, aperture oblique, circular, peristome thick, double, the inner margin simple, the outer much expanded and reflected at the outer and upper part, forming a strong sutural fold, in one specimen nearly a tube. Interior of aperture white, of the peristome yellowish.

Diam. maj. 25, alt. 12; apert. alt. (oblique) 8, lat. $8^1/_2$ Mill.

The specimens have been collected in a dead state, without operculum; thus the generic position is somewhat uncertain, as it resembles also some species of *Pterocyclos*; as however the surrounding isles are only inhabited by *Cyclotus*, I have located it in that genus. The species is somewhat intermediate between *C. pruinosus* Martens and *C. pyrostoma* Smith; with the latter it agrees by its strong shell with rather conspicuous lirae, which are however not so strong as in that species; with *pruinosus* it agrees by the sutural fold of the peristome, which is wanting in *pyrostoma*. Though the shell is bleached, it seems that the interior of the aperture has never been red-coloured as in *C. pyrostoma*. *C. pruinosus* is a much thinner shell, with stronger epidermis, much weaker lirae, and the peristome is for the largest part, nearly flatly expanded.

15. *Cyclotus guttatus* Pfr. var.

Martens, Ostas. Landschn. p. 119, Pl. 1, figs. 7 et 7^b.
Sarasin, Landschn. v. Celebes, p. 41, Pl. 2, figs. 20, 20^a, 21 et 21^a, Pl. 3, fig. 20^b.

The specimens agree very well with the figures of P. and F. Sarasin, and show the particularities mentioned (l. c.) of the specimens from Celebes, namely the less developed outer margin of the aperture. The specimens vary much in colour, one being nearly uniformly yellowish-white. The largest specimen has a diam. maj. of 17$^1/_2$, the smallest only of 13$^1/_2$ Mill.

16. *Neritina pulligera* Lin.

Martens, Mart.-Chemn. Conch. Cab. Ed. II, *Neritina*, p. 49, Pl. 1, figs. 4 et 5.
Martens, Süss- u. Brackw. Moll. p. 77.

One fine specimen.

17. *Neritina subsulcata* Sow.

Martens, Mart.-Chemn. Conch. Cab. Ed. II, *Neritina*, p. 142, Pl. 12, figs. 11 et 12.

A few fine specimens.

18. *Neritina subpunctata* Recl. var. *tricolor* Mart.

Martens, Mart.-Chemn. Conch. Cab. Ed. II, *Neritina*, p. 180, Pl. 18, fig. 19.

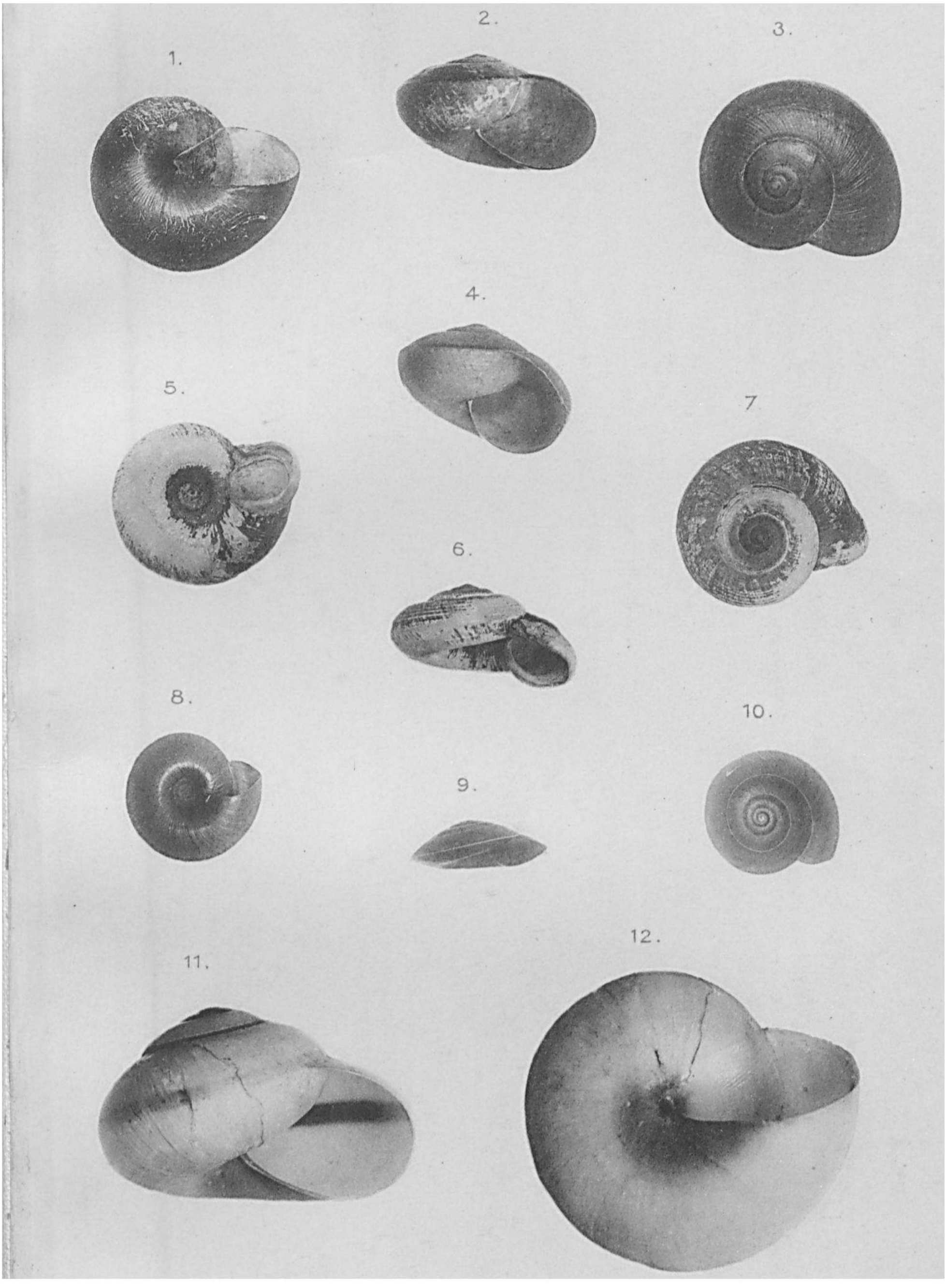
The painting of the only specimen agrees very well with the figure of Martens.

19. *Septaria suborbicularis* Sow.

Martens, Mart.-Chemn. Conch. Cat. Ed. II, *Navicella*, p. 31, Pl. 6, figs. 5—14.
Martens, Süss- u. Brackw. Moll. p. 84.

One dead shell.

Rhoon near Rotterdam, April 1906.



WÄKERLIN AD. NAT: PHOT:

L. VAN LEER & Cº AMSTERDAM.

1 - 4. Hemiplecta xullaensis Schepm. 5 - 7. Cyclotus xullaensis Schepm.
8 - 10. Trochomorpha Nouhuysi Schepm. 11 & 12. Xesta halmaherica, var.
taliabuensis Schepm.